

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of

Wireless Emergency Alerts

Amendments to Part 11 of the
Commission's Rules Regarding the
Emergency Alert System

PS Docket No. 15-91

PS Docket No. 15-94

REPLY COMMENTS OF APPLE INC.

The Wireless Emergency Alert (“WEA”) system is a unique partnership between public and private entities, and Apple is committed to its success. Because the WEA system plays an important role in public safety, Apple generally agrees with comments urging the Federal Communications Commission to proceed carefully when considering new obligations for the parties that enable it, to preserve implementation flexibility, and to analyze rigorously whether new requirements are feasible and would create clear benefits for consumers.¹ Apple writes separately to underscore that the Commission should not adopt a new regulation mandating that all companies implement a standardized opt-out menu, and should instead allow the best consumer experience based on different companies’ hardware, operating systems, and user interfaces. Apple also cautions against relying solely on third party applications to implement additional

¹ See generally Comments of the Alliance for Telecommunications Industry Solutions; Comments of CTIA; Comments of Microsoft Corporation; Comments of Verizon; Comments of T-Mobile USA, Inc. in Response to Further Notice of Proposed Rulemaking; Comments of AT&T Services Inc. Unless otherwise indicated, all comments referenced herein were filed in PS Docket Nos. 15-91 & 15-94 on December 8, 2016.

alerting functionality.

1. The FCC Should Not Adopt a New WEA Regulation That Dictates User Interface Designs for Opt-Out Menus.

As Apple and others have observed, enabling users to opt out of wireless emergency alerts at particular times and under specified conditions (*e.g.*, when the user has activated Do Not Disturb mode) would likely increase overall user willingness to receive alerts.² The Commission should permit users to specify how and when they receive alerts, with the exception of Presidential Alerts that are ineligible for opt out.³ Apple requests that the Commission does not mandate that all companies implement the same user interface for opt-out menus.⁴

The FCC does not require handsets to implement specific user interface designs.⁵ This is consistent with the Commission's determination in several different contexts that flexible regulations promote innovation, while command-and-control style mandates do

² See Letter from Paul Margie, Counsel for Apple Inc., Harris, Wiltshire & Grannis LLP, to Marlene H. Dortch, Secretary, FCC, at 1, PS Docket No. 15-91 (filed Mar. 21, 2016); *see also* Comments of Microsoft Corporation at 7; Letter from David Blonder, Director, Legal Counsel, Regulatory and Privacy, BlackBerry, to Marlene H. Dortch, Secretary, FCC, at 1 (filed Mar. 21, 2016).

³ See Comments of Microsoft Corporation at 7; 47 C.F.R. § 10.280.

⁴ *Wireless Emergency Alerts; Amendments to Part 11 of the Commission's Rules Regarding the Emergency Alert System*, Report and Order and Further Notice of Proposed Rulemaking, FCC 16-127, 31 FCC Rcd. 11,112 ¶ 158 (rel. Sept. 29, 2016) ("*Further Notice*").

⁵ Indeed, even when Congress specifically directed the Commission to create accessibility regulations for user interfaces for devices used to view video programming, the Commission explained that it was "mindful of the need to ensure that covered entities can continue to develop innovative compliance solutions, without being precluded from using a particular technology...." *Accessibility of User Interfaces, And Video Programming Guides and Menus*, Report and Order and Further Notice of Proposed Rulemaking, FCC 13-138, 28 FCC Rcd. 17,330 ¶ 80 (2013).

not.⁶ The Commission should not mandate specific user interface designs now.

Design mandates are undesirable for users as well as manufacturers and developers.⁷ This is because, as Microsoft has explained, “OS developers ... devote[] considerable thought and resources to a UI design that remains consistent across the user experience,” in order to promote usability for devices and their ecosystems.⁸ For example, Apple released its first Human Interface Guidelines almost 30 years ago, and continues to develop and refine UI design principles to enhance the user experience for its products—including iPhones.⁹ Indeed, as one party has observed, “Apple’s Human

⁶ See, e.g., *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, FCC 15-47, 30 FCC Rcd. 3959 ¶ 205 (2015) (“[I]t is vitally important to establish flexible, yet simple, rules that would allow for a wide variety of innovative services to be deployed in the 3.5 GHz Band.”); *Improvements to Benchmarks & Related Requirements Governing Hearing Aid-Compatible Mobile Handsets*, Fourth Report and Order and Notice of Proposed Rulemaking, FCC 15-155, 30 FCC Rcd. 13,845 ¶ 1 (2015) (“Today, we take steps to modernize our wireless hearing aid compatibility rules and ensure that people with hearing loss have full access to innovative handsets and technologies. In so doing, we recognize the need to pursue a flexible approach that continues to encourage innovation and investment by industry.”); *Promoting Expanded Opportunities for Radio Experimentation & Market Trials Under Part 5 of the Commission’s Rules and Streamlining Other Related Rules*, Report and Order, 28 FCC Rcd. 758 ¶ 3 (2013) (“To encourage innovation, the Part 5 rules provide flexibility regarding allowable frequency range, power, and emissions.”); *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Notice of Proposed Rulemaking, FCC 15-138, 30 FCC Rcd. 11,878 ¶ 3 (2015) (“[O]ur goal is to develop flexible rules that will accommodate a wide variety of current and future technologies. Flexibility will also encourage innovation in the development of advanced wireless services using the mmW bands.”).

⁷ See Comments of Microsoft Corporation at 7.

⁸ *Id.*

⁹ Apple Inc., *iOS Human Interface Guidelines, Design Principles* (2016), <https://developer.apple.com/ios/human-interface-guidelines/overview/design-principles/>.

Interface Guidelines ... [are] a key part of Apple's success."¹⁰ Users have familiarity with the current iPhone opt-out user interface, in part because that interface conforms to Apple's UI design principles.

Apart from the inflexibility inherent in any regulatory mandate, the specific menu design proposed by the National Weather Service ("NWS") illustrates some of the potential disadvantages of imposing a standardized opt-out menu.¹¹ In Apple's experience, in order to increase the success of a menu, a menu interface must avoid using terminology with which the end user is likely to be unfamiliar, use only text that is both clear and concise, and ensure that the function performed by interactive elements (such as switches in settings) be clear at a glance.¹² NWS's mission is critical, and we are committed to advancing its goals. But analyzing NWS's menu recommendation suggests that mandating its use would frustrate rather than promote these goals.

NWS proposes, for example, that user interfaces provide separate opt-out settings for Imminent Threat alerts based on whether they are "extreme" or "severe" (though not based on any of the other Common Alerting Protocol elements specified in the rules).¹³ But because these terms have similar definitions, consumers—and perhaps even those issuing warnings—will understand them in subjective and unpredictable ways. An opt-out menu that depends on consumers distinguishing these terms meaningfully would

¹⁰ iPhone Life Magazine, *Importance of The HIG* (2016), <http://www.iphonelife.com/issues/2011Sept-October/ImportanceoftheHIG>.

¹¹ See Letter from Michael Gerber, Program Analyst, Office of Dissemination, NOAA/National Weather Service, to Marlene H. Dortch, Secretary, FCC, PS Docket No. 15-91 (filed May 3, 2016) ("NWS Ex Parte").

¹² See Apple Inc., *iOS Interface Guidelines, Interaction, Terminology* (2016), <https://developer.apple.com/ios/human-interface-guidelines/interaction/terminology/>.

¹³ NWS Ex Parte at 2.

likely perform poorly. The words do not convey objective differences to the end user regarding the types of alerts she would or would not receive based on her settings selections.

NWS agrees that end users may not differentiate between “extreme” and “severe” alerts.¹⁴ But based on Apple’s experience designing menus on mobile devices, NWS’ proposal to add additional text adjacent to the opt-out settings switch in a smaller font stating that extreme alerts represent the “[g]reatest threat to life and property”¹⁵ would not fix this problem.¹⁶ In fact, adding more text to a small-screen menu would likely produce more complete opt outs.

Because of the subjectivity that characterizes the existing terms, an end user and an alert originator are very likely to have conflicting understandings of how a particular alert should be classified. For example, while NWS characterizes extreme winds as an extreme alert, it lists dust storms as severe.¹⁷ And while NWS lists flash floods as severe rather than extreme,¹⁸ consumers in flash flood prone geographies may disagree with that assessment. Thus, an alert originator could send an alert that it believes belongs in one category, but that the user believes belongs in another, resulting in confusion and frustration. Such a result would be counter to the Commission’s stated goal of

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ Indeed, there do not appear to be any published criteria for independently and objectively determining how to characterize the severity of alerts.

¹⁷ NWS, NOAA, Department of Commerce, *Weather-Ready Nation, Weather warnings on the go!*, <http://www.nws.noaa.gov/com/weatherreadynation/wea.html>.

¹⁸ *Id.*

“improv[ing] the consumer experience with WEA.”¹⁹

Based on this analysis, and its experience with a wide variety of menus, the WEA menu for iPhones²⁰ does not distinguish opt-out choices for Imminent Threat alerts based on whether an originator characterizes that alert as “extreme” or “severe.” We urge the Commission to preserve the flexibility of companies to make similar design decisions based on their experience on how best to serve consumers using their specific hardware, software, and user interfaces.

2. Third Party Mobile Emergency Alert Applications.

AT&T requests that the Commission not require any additional obligations for carriers, in part because doing so would require them “to undertake expensive modifications to their networks that are suitable for WEA only, and that have no current commercial application.”²¹ Instead, AT&T suggests that, if the Commission does move forward with certain additional WEA requirements, it “investigat[e] ... the feasibility” of

¹⁹ *Further Notice* ¶ 158.

²⁰ Every iPhone Apple sells will receive Wireless Emergency Alerts if the user’s carrier supports this feature. WEAs are not available on iPads, laptops, and other Apple devices.

²¹ Comments of AT&T Services Inc. at 5. AT&T also asserts that a WEA App could help address network congestion issues associated with new features if, for example, devices used automated language translation software in lieu of transmitting the alert in more than one language. AT&T Comments at 16-17. We agree with AT&T, however, that “automatic translation is not a good way to go with WEA messages as the automated translation may change the meaning of the message.” Letter from William Roughton, Jr., AT&T Services Inc., to Marlene H. Dortch, Secretary, FCC, Attachment at 4, PS Docket No. 15-91 (filed Mar. 17, 2016). The Commission has also found that, consistent with the views of “FEMA and the majority of emergency management agencies [addressing the issue in this proceeding,] that automatic translation technologies that may reside on some mobile devices are currently too inaccurate to support emergency messaging.” *Further Notice* ¶ 43.

implementing them via a standalone “WEA App.”²² AT&T contemplates that a government entity such as the Federal Emergency Management Agency or a third party such as the Alliance for Telecommunications Industry Solutions could develop this app.²³

Apple has no objection to exploring potential roles that downloadable applications created by or at the behest of agencies can play on smart devices. Indeed, the federal government has already created many apps for the iOS platform.²⁴ In the context of emergency alerting, however, Apple cautions against relying solely on downloadable apps to provide users with time-sensitive access to important information without network-based EAS systems in place to ensure acceptable and timely performance. Emergency apps have already proven to be problematic in other jurisdictions.²⁵

One especially critical factor for third party applications is the way in which iOS app developers (including agencies) would send notifications to end users. To ensure acceptable device performance and to avoid rapid battery drain, third party applications on iOS devices do not have the ability to run constantly in the background while maintaining a persistent connection to a network.²⁶ As a result, developers do not

²² Comments of AT&T Services Inc. at 4.

²³ *Id.* at 4-5.

²⁴ USA.gov, *Federal Government Mobile Apps Directory*, <https://www.usa.gov/mobile-apps>.

²⁵ See, e.g., Amar Toor, *It Took Nearly Three Hours for France’s Terror Alert App to Respond to Nice Attack*, THE VERGE (July 15, 2016), <http://www.theverge.com/2016/7/15/12197276/nice-terror-attack-france-alert-app-facebook-safety-check>.

²⁶ See Apple Inc., *Guides and Sample Code, App Programming Guide for iOS, Background Execution* (Sept. 13, 2016), <https://developer.apple.com/library/content/documentation/iPhone/Conceptual/iPhoneOSProgrammingGuide/BackgroundExecution/BackgroundExecution.html>.

provide notifications to applications directly. Instead, application users receive notifications through the Apple Push Notification service (“APNs”).²⁷

Apple has implemented the APNs in a manner that strikes a careful balance among various factors that otherwise could degrade device performance, resulting in application notification functionality that is both robust and highly efficient.²⁸ It is important for the Commission to understand, however, that this balance means that the APNs is a best efforts service that does not guarantee delivery of notifications. Indeed, Apple’s App Store Review Guidelines specifically provide that “Push Notifications must not be required for the app to function”²⁹ In addition, because devices must acknowledge receipt of each notification,³⁰ network latency and congestion—which are likely to be present in emergency situations—can also significantly impact notification delivery that depends on the public Internet rather than a carrier network.

Finally, as the Commission has recognized, users obtain apps for their mobile devices from application stores such as Apple’s App Store.³¹ Thus, unlike built-in WEA

²⁷ Apple Inc., *Guides and Sample Code, Local Remote Notification Programming Guide, APNs Overview* (Oct. 27, 2016), <https://developer.apple.com/library/content/documentation/NetworkingInternet/Conceptual/RemoteNotificationsPG/APNSOverview.html>.

²⁸ *Id.*

²⁹ Apple Inc., *App Store Review Guidelines*, Design § 4.5.4 (2016), <https://developer.apple.com/app-store/review/guidelines/>.

³⁰ See Apple Inc., *Guides and Sample Code, Troubleshooting Push Notifications* (July 28, 2016), https://developer.apple.com/library/content/technotes/tn2265/_index.html.

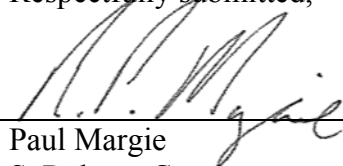
³¹ *Implementation of Section 6002(B) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Eighteenth Report, DA 15-1487, 30 FCC Rcd. 14,515 ¶ 147 (WTB 2015).

functionality, which is included with the device and toggled on by default,³² a user accessing WEA features through a third party app on iOS would have to download the app prior to receiving notifications.

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Apple agrees with the Commission that it is important to carefully consider whether changes to the WEA rules would improve the consumer experience. In doing so, the FCC should maintain its long-standing policy of avoiding regulations that make design mandates for companies, and should take into account the limitations of third party applications.

Respectfully submitted,



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³² Apple Inc., *About Emergency and AMBER Alerts on Your iPhone* (2016), <https://support.apple.com/en-gb/HT202743>.